SONY

PDW-850
Professional Disc Camcorder

The PDW-850 is a powerful Professional Disc™ camcorder equipped with three newly developed 2/3-inch-type HD Power HAD FX™ CCDs. It provides outstanding picture quality with high resolution, high sensitivity, low noise, and wide dynamic range. Some of the new features include a large high-resolution color LCD viewfinder and GPS. The PDW-850 inherits excellent, versatile features from the PDW-F800 and PDW-700 XDCAM™ camcorders, but weighs less and consumes less power. Using an optional wireless adapter, the CBK-WA100, proxy files can be immediately transmitted to the broadcasting station. Also, an optional camera adapter with a CCU solution makes it studio-ready. The PDW-850 is an ideal choice for many different camera professionals, from those engaged in news gathering, when speed is the key concern, to those who produce TV programs and documentaries, when quality is crucial.

Functions

High Picture Quality

The PDW-850 incorporates three newly designed 2/3-inch-type HD Power HAD™ FX CCDs to achieve high resolution, wide dynamic range, high sensitivity of F11 (60i) and F12 (50i), and an excellent signal-to-noise ratio of 62 dB. It provides greater freedom of expression for creative shooting, even when shooting under severe lighting conditions. In addition to improving picture quality, Sony has been able to reduce the weight of the camera body to 4.2 kg (9.2 lbs) and its power consumption to 37 W.

Selectable Format and Bit Rates

This camcorder has a highly flexible multi-format recording capability. Operators can select Full-HD format (1920 x 1080) at up to 50 Mbps using MPEG HD422, as well as MPEG HD at 35 Mbps / 25 Mbps, or SD format MPEG IMX at 50 Mbps, and DVCAM at 25 Mbps in MXF file format (standard supported formats). Also, having an up/down conversion function, this camcorder can be integrated into an existing SD production system or can be chosen for future HD operation.

3.5-inch Color LCD Viewfinder

With a large, easy-to-read 3.5-inch QHD color LCD viewfinder as a standard accessory, the PDW-850 offers outstanding resolution of 960 × RGB x 540 pixels, strongly supporting critical focus control during HD shooting. The viewfinder cover can be flipped up to enhance visibility when the camcorder is set on a tripod.

Compatibility with Sony's Wireless Adapter

The PDW-850 is designed to support wireless operation using an optional wireless adapter, the CBK-WA100. Simply connect the wireless adapter to an SDI output. The wireless adaptor enables the crew to view live XAVC proxy video from the adapter using a tablet or smartphone. The low-resolution proxy files[1] created on the CBK-WA100 can be immediately transmitted back to the station or uploaded to the cloud environment for review and editing. The use of adapters can significantly reduce the time and cost of production and allow faster and cost-efficient network operations.

*1 File name of proxy data can be copied from hi-res data.

Expanded Solutions

With its GPS system, the PDW-850 can store geographical coordinates in MXF files along with the video/audio data and GPS log file. This is beneficial in post-production when tracing the shooting location. The PDW-850 also has a 50-pin interface to support a system camera solution with a CA/CCU via triax or fiber cable. The digital extender function enables an image to be digitally expanded two to four times in size without any loss of image sensitivity. Pool-feed is another standard feature enabling the recording of audio and video feed signals supplied by an external VTR/camcorder via HD/SD-SDI or composite.

XDCAM HD   Power HAD FX   MPEG HD422   MPEG HD   MPEG IMX   DVCAM   Professional Disc DL

Specifications

	PDW-850
General	
Mass	Approx. 4.1 kg (body),
	Approx. 9 lb 4 oz (body),
	Approx. 6.2 kg (13 lb 7 oz) (with VF, Mic, Disc, BP-L80S battery)
	Approx. 5.9kg (13 lb 0 oz) ((with VF, Mic, Disc, BP-GL95 battery)
Dimensions (W x H x D)*1	124 x 269 x 332 mm (5 x 10 5/8 x 13 1/8 inches) (excluding protrusions, body only)
Power Requirements	DC 12 V +5.0 V/-1.0 V
Power Consumption	Approx. 37 W (while recording, color LCD on)
	Approx. 41 W (while recording, with viewfinder, color LCD on, manual lens, microphone)
Operating Temperature	-5°C to +40°C (23°F to 104°F)
Storage Temperature	-20°C to +60°C (-4°F to +140°F)
Humidity	10% to 90% (relative humidity)
Continuous Operating Time	Approx. 115 min with BP-L80S battery
	Approx. 135 min with BP-GL95 battery
Recording Format (Video)	MPEG HD422 (CBR: 50 Mbps)
	MPEG HD:
	- HQ mode (VBR, 35 Mbps max.)
	- SP mode (CBR, 25 Mbps),
	- LP mode (VBR, 18 Mbps max.) (playback only)
	MPEG IMX (CBR, 50 Mbps)
	DVCAM (CBR, 25 Mbps)
Recording Format (Audio)	MPEG HD422: 4 ch/24 bits/48 kHz
	MPEG HD: 4 ch/16 bits/48 kHz
	MPEG IMX: 4 ch/24 bits/48 kHz or 4 ch/16 bits/48 kHz
	DVCAM: 4 ch/16 bits/48 kHz
Recording Format (Proxy Video)	MPEG-4
Recording Format (Proxy Audio)	A-law (4 ch/8 bits/8 kHz)
Recording/Playback Time (MPEG HD422)	50 Mbps: Approx. 95 min (PFD50DLA), Approx. 43 min (PFD23A)
Recording/Playback Time (MPEG HD)	35 Mbps, 4-ch audio: More than 145 min (PFD50DLA), More than 65 min (PFD23A)
	35 Mbps, 2-ch audio (playback only): More than 150 min (PFD50DLA), More than 68 min (PFD23A)
	25 Mbps, 4-ch audio: Approx. 190 min (PFD50DLA), Approx. 85 min (PFD23A)
	25 Mbps, 2-ch audio (playback only): Approx. 200 min (PFD50DLA), Approx. 90 min (PFD23A)
	18 Mbps, 4-ch audio (playback only): More than 248 min (PFD50DLA), More than 112 min (PFD23A)
	18 Mbps, 2-ch audio (playback only): More than 265 min (PFD50DLA), More than 122 min (PFD23A)
Recording/Playback Time (MPEG IMX)	50 Mbps: Approx. 100 min (PFD50DLA), Approx. 45 min (PFD23A)
	40 Mbps (playback only): Approx. 120 min (PFD50DLA), Approx. 55 min (PFD23A)
	30 Mbps (playback only): Approx. 150 min (PFD50DLA), Approx. 68 min (PFD23A)
Recording/Playback Time (DVCAM)*5	25 Mbps: Approx. 185 min (PFD50DLA), Approx. 85 min (PFD23A)
Recording Frame Rate	MPEG HD422 50Mbps: 1920x1080 @59.94i, 29.97p, 50i, 25p, 23.98p 1280x720 @59.94p, 50p
	MPEG HD420 (HQ 35Mbps, SP 25Mbps): 1440x1080 @59.94i, 29.97p, 50i, 25p, 23.98p 1280x720 @59.94p, 50p
	MPEG HD420 (LP 18Mbps): (Playback only for 1440x1080 @59.94i, 29.97p, 50i, 25p, 23.98p)
	MPEG IMX 50Mbps/DVCAM Mode: - 720 x 486 @59.94i/29.97p - 720 x 576 @50i/25p)
	MPEG IMX 40Mbps/30Mbps: (Playback only for - 720 x 486 @59.94i/29.97p - 720 x 576 @50i/25p)
Lens	
Lens Mount	2/3-inch type 48 bayonet mount
Input/Output	
Genlock Input	BNC (x1), 1.0 Vp-p, 75 Ω
Timecode Input	BNC (x1), 0.5 Vp-p to 18 Vp-p, 10 kΩ
SDI Input	BNC (x1)
	HD/SD switchable;
	HD-SDI: SMPTE 292M (w/embedded audio)
	SD-SDI: SMPTE 259M (w/embedded audio)
Audio Input	CH-1/CH-2: XLR-type 3-pin (female) (x2), Line/Mic/Mic +48V/AES/EBU selectable
Mic Input	XLR-type 5-pin (female, stereo) (x1)
Test Output	BNC (x1), switchable;
	HD: Y
	SD: composite (character on/off)
SDI Output	BNC (x2)
	1 (HD/SD switchable);
	HD-SDI: SMPTE 292M (with embedded audio)
	SD-SDI: SMPTE 259M (with embedded audio)
	2 (HD/SD switchable, character on/off);
	HD-SDI: SMPTE 292M (with embedded audio)
	SD-SDI: SMPTE 259M (with embedded audio)
Audio Output	CH-1/CH-2: XLR-type 5-pin (male, stereo) (x1)
Timecode Output	BNC (x1), 1.0 Vp-p, 75 Ω
Earphone Output	Mini-jack (x2); front: monaural, rear: stereo/monaural
Speaker Output	Monaural
DC Input	XLR-type 4-pin (male) (x1), 11 V to 17 V
DC Output	4-pin (x1) (for wireless microphone receiver); 11 V to 17 V DC (MAX 1A)
Lens	12-pin
Remote	8-pin
Light	2-pin, DC 12 V, max. 50 W
Camera Adaptor	50-pin (x1)
Ethernet	RJ-45 (x1), 100BASE-TX: IEEE 802.3u, 10BASE-T: IEEE 802.3
USB	(x1) for Proxy Recording on USB Memory, and Firmware Version-up
Viewfinder	20-pin IF for HDVF Series Viewfinder

	PDW-850
Audio Performance	
Frequency Response	20 Hz to 20 kHz, +0.5 dB/-1.0 dB
Dynamic Range	More than 93 dB
Distortion	Less than 0.08% (at 1 kHz, reference level)
Crosstalk	Less than -70 dB (at 1 kHz, reference level)
Wow and Flutter	Below measurable limit
Headroom	12/16/18/20 dB (selectable)
Camera Section	
Imager	3-chip 2/3-type HD PowerHAD FX CCDs
Effective Picture Elements	1920 (H) x 1080 (V)
Optical System	F1.4 prism system
Built-in Optical Filters	CC; A: Cross, B: 3200K, C: 4300K, D: 6300K
	ND; 1: Clear, 2: 1/4ND, 3: 1/16ND, 4: 1/64ND
Shutter Speed (Time)	1080/59.94i: 1/100, 1/125, 1/250, 1/500, 1/1000. 1/2000, ECS*2, SLS*3
	1080/50i: 1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS*2, SLS*3
	1080/29.97p: 1/40, 1/60, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS*2, SLS*3
	1080/25p: 1/33, 1/50, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS*2, SLS*3
	1080/23.98p: 1/32, 1/48, 1/50, 1/60, 1/96, 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS*2, SLS*3
	720/23.98p (Pull-down): 23.98p: 1/32, 1/48, 1/50, 1/60, 1/96, 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS*2, SLS*3
Shutter Speed (Slow Shutter (SLS))	2, 3, 4, 5, 6, 7, 8, 16 frame accumulation
Slow & Quick Motion Function	(MPEG HD422 50M@1080 mode only)
	23.98p: Selectable from 1 to 48 frame/sec as recording frame rate
	25p: Selectable from 1 to 50 frame/sec as recording frame rate
	29.97p: Selectable from 1 to 59.94 frame/sec as recording frame rate
Sensitivity (2000 lx, 89.9% reflectance)	1080/59.94i: F11 (typical)
	1080/50i: F12 (typical)
Minimum Illumination	Approx. 0.3 lx (F1.4 lens, +42 dB, with slow shutter: Off)
White Balance	Preset (3200K), Memory A, Memory B/ATW
Gain Selection	-6, -3, 0, 3, 6, 9, 12, 18, 24, 30, 36, 42 dB
S/N Ratio	62 dB (58 dB w/o Noise Suppressor)
Horizontal Resolution	1,000 TV lines or more (1920 x 1080i mode)
Registration	0.02% or less for entire screen area (excluding distortion due to lens)
Modulation Depth	45% or more at 27.5 MHz (typical)
Digital Extender	x2, x3, x4
Viewfinder	
Viewfinder	(Option)
Other Equipment	
Built-in LCD Monitor	3.5-inch type color LCD monitor 960 x 540*4
Built-in Speaker	(x1)
GPS	YES
Supplied Accessories	
	Shoulder strap (1)
	Microphone cable (1)
	Microphone spacer (1)
	Operation manual CD-ROM (Japanese, English, French, Germany, Italian, Spanish, Portuguese, Russian, Chinese) (1)
	Operation guide (Japanese, English, French, Spanish, Chinese, Russian, Kazakhstan) (1)

*1: The values for dimensions are approximate.
*2: ECS: Extended Clear Scan
*3: SLS: Slow Shutter
*4: Viewable area measured diagonally.
*5: Recording /Playback time may vary the according to the encoding or memory

Optional Accessories

PFD23A /PFD50DLA
Professional Disc

HDVF-C30WR/ 20A/200
Viewfinder

BP-GL95A/65A, BP-L80S/60S
Lithium-ion Battery Pack

AC-DN10/DN2B
AC Adapter

BC-L500/L160/L70
Battery Charger

CA-FB70/TX70
System Camera Configuration Units

ECM-680S/678/673
Shotgun-type Electret Condenser Microphone

CBK-WA100
Wireless Adapter

DWR-S02D
Two-channel Slot-in Portable Digital Wireless Microphone Receiver

RM-B170
Remote Control Unit